0400

Attorney's Docket No.: 07844-462001 / P426

05/23/01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : John Peterson
Serial No. : 09/848,017
Filed : May 3, 2001
Title : PROJECTING IMAGES ONTO A SURFACE

Art Unit : Unknown
Examiner : Unknown

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please amend the application as follows:

In the specification:

Replace the paragraph beginning at page 5, line 4 with the following rewritten paragraph:

FIG. 1 is a block diagram of a computer system for merging images;

FIG. 2A and 2B show user interfaces presented by the system of FIG. 1;

FIG. 3 shows the relationship between perspective distortion, the rotation angle, and the focal length;

FIG. 4 is a flow chart of the process performed by the system of FIG. 1 to merge the images, including determining relative positions of the images, correcting perspective distortion in the images, and determining the focal length and rotation angles of the images;

FIG. 5A illustrates the use of the focal length and the rotation angle to map images onto a cylinder;

FIG. 5B illustrates the use of the focal length and the rotation angle to incorporate a computer generated 3-dimensional object into a panoramic image;

FIGs. 6A-6F illustrate intermediate steps in merging images;

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

May 29, 2001
Date of Deposit

Diana M. Bradley
Signature

Diana M. Bradley
Typed or Printed Name of Person Signing Certificate

FIGs. 7A and 7B are flow charts of the process performed by the system to determine the relative positions of the images;

FIG. 8 is a flow chart of the process performed by the system to correct perspective distortion in the images;

FIG. 9 shows images that are in the process of being positioned relative to each other;

FIG. 10A shows the conversion of two-dimensional coordinates into four-dimensional coordinates;

FIG. 10B is a flow chart of the process performed by the computer system of FIG. 1 to compute the vertices of a perspective distorted image based on rotation angles and focal lengths;

FIGS. 10C-10E show the equations terminology used to compute the focal length and rotation angles of an image;

FIG. 11 is a flow chart of the process performed by the system to compute the focal length and the rotation angle of an image; and

FIG. 12 is a flow chart of a process performed to merge images.

REMARKS

This preliminary amendment is submitted to correct an inadvertent omission in the brief description of the drawings. Support for this amendment is found at page 19, line 6 through page 20, line 27.

Attached is a marked-up version of the changes being made by the current amendment. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 29 May 01

Hans R. Troesch
Reg. No. 36,950

Fish & Richardson P.C.
2200 Sand Hill Road, Suite 100
Menlo Park, CA 94025
Telephone: (650) 322-5070
Facsimile: (650) 854-0875

50048777.doc

Version with markings to show changes made

In the specification:

Paragraph beginning at page 4, line 5 has been amended as follows:

FIG. 1 is a block diagram of a computer system for merging images;

FIG. 2A and 2B show user interfaces presented by the system of FIG. 1;

FIG. 3 shows the relationship between perspective distortion, the rotation angle, and the focal length;

FIG. 4 is a flow chart of the process performed by the system of FIG. 1 to merge the images, including determining relative positions of the images, correcting perspective distortion in the images, and determining the focal length and rotation angles of the images;

FIG. 5A illustrates the use of the focal length and the rotation angle to map images onto a cylinder;

FIG. 5B illustrates the use of the focal length and the rotation angle to incorporate a computer generated 3-dimensional object into a panoramic image;

FIGs. 6A-6F illustrate intermediate steps in merging images;

FIGs. 7A and 7B are flow charts of the process performed by the system to determine the relative positions of the images;

FIG. 8 is a flow chart of the process performed by the system to correct perspective distortion in the images;

FIG. 9 shows images that are in the process of being positioned relative to each other;

FIG. 10A shows the conversion of two-dimensional coordinates into four-dimensional coordinates;

FIG. 10B is a flow chart of the process performed by the computer system of FIG. 1 to compute the vertices of a perspective distorted image based on rotation angles and focal lengths;

FIGS. 10C-10E show the equations terminology used to compute the focal length and rotation angles of an image;[and]

FIG. 11 is a flow chart of the process performed by the system to compute the focal length and the rotation angle of an image[.]; and

FIG. 12 is a flow chart of a process performed to merge images.